A Guide to Remediation Certificates for Petroleum Storage Tank Sites

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Overview

Alberta Environment is committed to promoting the return of contaminated sites to productive use, while ensuring risks to human health and the environment are minimized. Alberta Environment has developed the *Remediation Certificate Regulation* as a formal system of regulatory closure for sites that fall under *Part 5* of the *Environmental Protection and Enhancement Act*. This legislation provides certainty to site owners, managers and other stakeholders involved with a contaminated site. It ensures that regulatory issues for a given release are no longer a concern under a given land use within the remediated area.

Section 117 of the *Environmental Protection and Enhancement Act* allows the Director or an inspector to issue remediation certificates. This guide is designed to provide an overview of contaminated sites management as it relates to the *Remediation Certificate Regulation* pursuant to the *Environmental Protection and Enhancement Act*. In the event of a discrepancy between this guide and the Act or Regulation, the Act or Regulation prevails.

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Table of Contents

1.0 INTRODUCTION 1

2.0 SCOPE OF REMEDIATION CERTIFICATE PROGRAM FOR PETROLEUM STORAGE TANK SITES 3

3.0 OVERVIEW OF CONTAMINATED SITES MANAGEMENT 3

3.1 Substance Release 3
3.2 Release Reporting 4
3.2.1 Initial Report 4
3.2.2 Seven-Day Report 4
3.3 Source Removal/Control 4
3.4 Environmental Site Assessment 5
3.4.1 Phase 1 Environmental Site Assessment 5
3.4.2 Phase 2 Environmental Site Assessment 5
3.5 Define Remediation Requirements and Implement Remedial Action Plan . 6
3.5.1 Alberta Tier 1 Soil and Groundwater Remediation Guidelines 6
3.5.2 Alberta Tier 2 Soil and Groundwater Remediation Guidelines 7
3.5.3 Exposure Control 7
3.6 Confirm Remediation Results and Submit Final Report 8

4.0 REMEDIATION CERTIFICATES 8

4.1 Eligibility 9
4.1.1 Releases Contained Onsite 9
4.1.2 Onsite Releases Extending Outside the Legal Land Boundaries (Offsite) 9
4.1.3 Remediation of Offsite Area Only 10
4.1.4 Number of Remediation Certificates 10
4.2 Ineligibility 10

5.0 APPLICATION PROCESS 11

5.1 Remediation Certificate Application Form 11
5.2 Application Fees and Submissions 15
5.2.1 Application fees 15
5.2.2 Application Submissions 15
5.3 Role of the Environmental Professional 15
5.4 Role of the Applicant 16
5.5 Remediation Certificates 16
5.5.1 Certificate Content 16
5.5.2 Liability Closure 17

6.0 PUBLIC DISCLOSURE OF INFORMATION 17

7.0 APPEAL PROCESS 18

8.0 AUDIT PROCESS **19**

9.0 REFERENCE DOCUMENTS **20**

10.0 APPENDIX A: EXAMPLE DIAGRAMS **21**

11.0 APPENDIX B: DEFINITIONS FOR REMEDIATION CERTIFICATE GUIDELINE **24**

LIST OF FIGURES

Figure 1. Framework for Contaminated Sites Management in Alberta
Figure 2. Example of 30 m Buffer Zone Adjacent to More Sensitive Land Use

1.0 Introduction

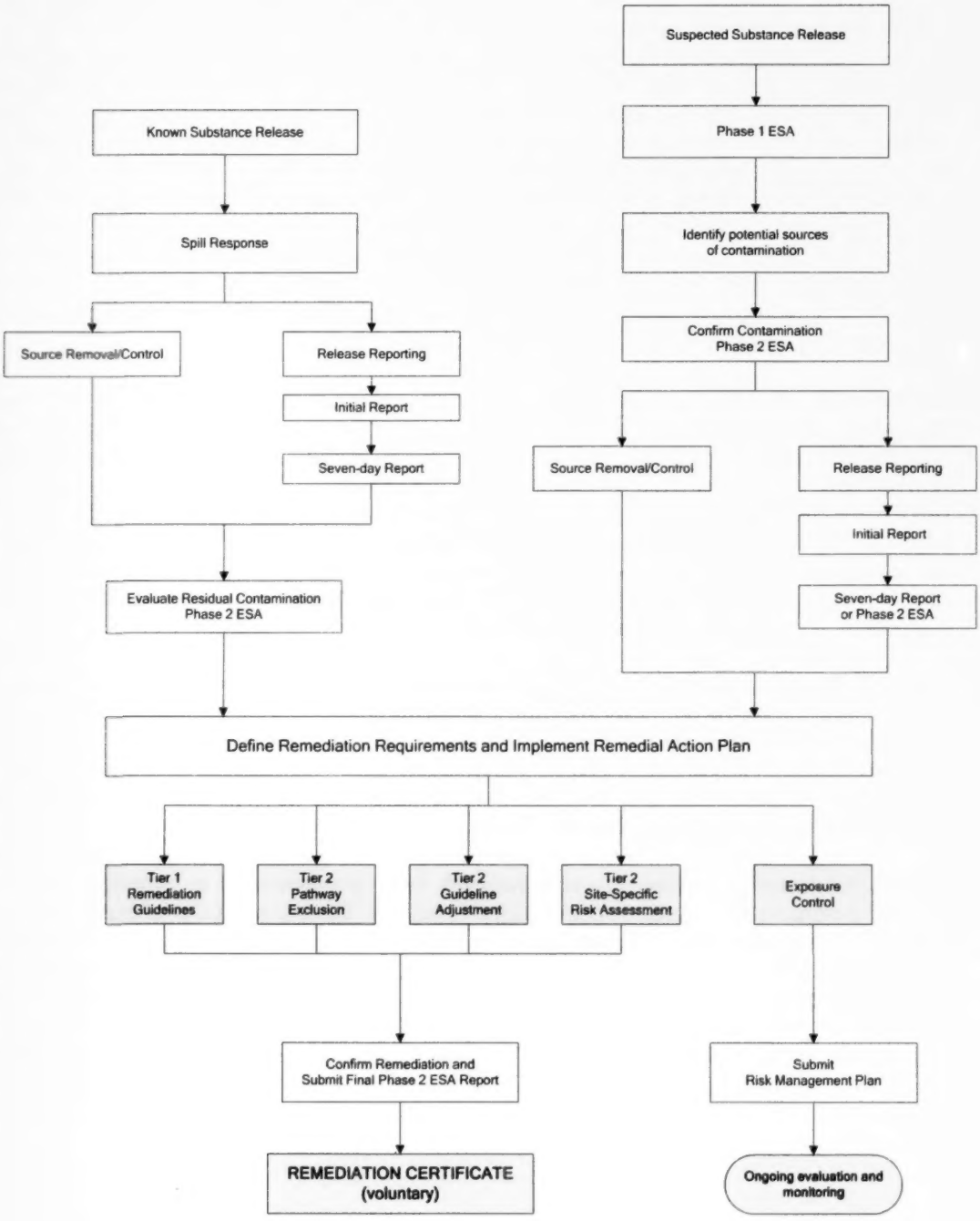
In the past, financial implications associated with perpetual liability under the *Environmental Protection and Enhancement Act* (EPEA) were seen as a significant barrier to cleaning up contaminated sites. Remediation certificates provide lending institutions, investors, and the public with a mechanism to demonstrate when the clean up of substance releases under Part 5 of EPEA have been addressed to the satisfaction of government for a defined land use. Remediation certification is a voluntary process of regulatory liability closure for a remediated area. If the remediated area is compliant with *Alberta Tier 1 Soil and Groundwater Remediation Guidelines* (Alberta Environment, 2007a, as amended) (Alberta Tier 1 guidelines) and Alberta *Tier 2 Soil and Groundwater Remediation Guidelines* (Alberta Environment, 2007b, as amended) (Alberta Tier 2 guidelines), a remediation certificate may be issued. A remediation certificate provides assurance that additional remediation is not required if guidelines are amended or updated.

Section 117 of EPEA provides the basis for refusing an application or issuing, amending, and cancelling remediation certificates. Section 118 of EPEA provides for closure of regulatory liability for a release that has been properly assessed, remediated, and received a remediation certificate. By providing closure of regulatory liability, Alberta Environment will not issue an Environmental Protection Order (EPO) following certification of a remediated area. In cases where conditions on a property change to a more sensitive use, further remediation or management may be required. The person making the land use change will need to address any additional adverse effects that may arise as a result of the change.

Alberta's remediation requirements are described in the Alberta Tier 1 guidelines and Alberta Tier 2 guidelines. Alberta Tier 1 guidelines are generic guidelines developed to protect most sites without modification. Alberta Tier 2 guidelines allow the consideration of site-specific conditions through the modification of Alberta Tier 1 guidelines. Exposure control involves risk management through physical barriers or administrative controls based on site-specific risk assessment.

Alberta Environment's role in contaminated sites management is evolving, with a greater emphasis on a systems coordinator function. Environmental professionals play a key role to ensure contaminated sites are cleaned up to meet Alberta Environment's guidelines. The intent of this document is to guide users of the *Remediation Certificate Regulation* through the process of contaminated sites management, from suspecting and confirming contamination, reporting obligations, remediation requirements and finally the process for applying for remediation certificates. Also included is some discussion on the issuance and auditing of remediation certificates.

Figure 1: Framework for Contaminated Site Management in Alberta Petroleum Storage Tanks



2.0 Scope of Remediation Certificate Program for Petroleum Storage Tank Sites

Petroleum Storage Tank (PST) sites include underground and aboveground storage tank facilities which contain or have contained gasoline, diesel, used engine oil, solvents, heating oil, aviation fuel, or similar petroleum product.

Regulation of petroleum storage tanks has been governed by the Canadian Standards Association since 1957 and the National Fire Code since 1963. An environmental code of practice, providing minimum standards for all underground tanks, was adopted in 1987 by the federal, provincial and territorial governments.

Alberta began a tank management program in 1989, creating a database of existing underground tanks in the province. A revised Fire Code was introduced in 1992, the year in which the Alberta Storage System's Contractor's Association was formed. This association, along with the Petroleum Tank Management Association of Alberta, now provides training and seminars on safe installation, removal and disposal of underground storage tank systems.

The *Environmental Protection and Enhancement Act* and the Alberta Fire Code require the operator or owner to report a known leaking tank first to the local fire authority and then to Alberta Environment.

Alberta Tier 1 guidelines and Alberta Tier 2 guidelines provide standards for specific contaminants and procedures for site investigations and clean-up. Remediation levels depend on the degree of risk from a site's contaminants. Lending institutions may require specific remediation. The *Alberta Fire Code* contains the most recent information on this topic.

3.0 Overview of Contaminated Sites Management

In this Section, Alberta Environment's expectations for contaminated sites management in Alberta are discussed, and available guidance documents are referenced. Figure 1 provides a general overview of the contaminated sites management system.

3.1 Substance Release

Contaminated sites are created by the accidental or deliberate release of a substance(s) to the environment. Regulatory concerns arise at these sites whenever the released substances are capable of impairment or damage to human health, the environment, safety or property.

Observed substance spills and release events create an immediate obligation to report the release. The person responsible must repair, remedy and confine the effects of the substance. Action must be taken to determine the nature and extent of the contamination, its impacts, and subsequently remediate, manage, remove or otherwise dispose of the substance(s) in such a manner as to prevent an adverse effect.

Apart from observed spills and releases that are immediately identifiable, there are other situations that can lead to suspected contamination at a site. Former industrial activities at a site discovered through historical corporate records, or physical evidence or indicators such as stressed vegetation, soil discolouration, or offensive odours may suggest the presence of contamination on a property.

3.2 Release Reporting

Alberta Environment has published several documents around release reporting. Sections 110 and 111 of EPEA provide the basis for Alberta's *Release Reporting Regulation*, which stipulates what must be reported, when, how and to whom reports must be made. In addition, *A Guide to Release Reporting* (Alberta Environment, 2005) provides further information about Alberta Environment's requirements.

3.2.1 Initial Report

Any spill, release or emergency that may cause, is causing, or has caused an adverse effect to the environment must be reported immediately to Alberta Environment by calling the 24-hour Environmental Hotline at 1-800-222-6514. Affected third parties must be notified that their property could be impacted if it is suspected that contamination has gone offsite.

3.2.2 Seven-Day Report

Within seven days of the initial report, a written report must be submitted to the Alberta Environment Director. The Director may waive the requirement for a written report if the initial report contained sufficient information and no adverse effects are likely from the release. A waiver may be requested at the time the initial report is being made. Unless and until the Director has granted a waiver, a written report must be submitted within 7 days.

3.3 Source Removal/Control

Part 5 of EPEA sets forth the regulatory requirement to take remedial measures once contamination is discovered. Substances released to the environment are to be controlled in such a way so as to mitigate their migration and prevent an adverse effect, or prevent worsening of the existing adverse effect. Removing or controlling the source of the release should occur simultaneously with reporting the release to Alberta Environment and other appropriate government agencies.

3.4 Environmental Site Assessment

3.4.1 Phase 1 Environmental Site Assessment

A Phase 1 Environmental Site Assessment (Phase 1 ESA) may be conducted to identify potential sources of contamination. The goal of a Phase 1 ESA is to gather sufficient information to estimate the likelihood, types and most probable location(s) of surface and subsurface contamination that may be present on a property. The information generated in a Phase 1 ESA can be used by the property owners, facility operators, purchasers, lenders and lessees to make informed decisions about the need for further environmental site assessments, property management, facility operations, options for future land use, investment, and remedial actions. Additional guidance on conducting a Phase 1 ESA is available from the *Canadian Standards Association* (Canadian Standards Association, 2001).

If there is insufficient information available to determine the potential for contamination, a Phase 2 Environmental Site Assessment (Phase 2 ESA) should be conducted to confirm the condition of the site.

3.4.2 Phase 2 Environmental Site Assessment

If an activity that could lead to a substance release has been identified during the Phase 1 ESA, a Phase 2 ESA is used to confirm contamination on the site. Phase 2 ESAs are also used to evaluate residual contamination after initial spill response and control or removal of sources. In a Phase 2 ESA, soil, and in some cases groundwater samples, are collected in a systematic manner and analyzed for the possible contaminants identified in the Phase 1 ESA or spill response.

The Phase 2 ESA, as referred to in this document, encompasses all ESAs after a Phase 1 ESA. The main components of the Phase 2 ESA include initial intrusive sampling to confirm if there is contamination, complete delineation of the contaminated area, establishment of remediation objectives, post remediation monitoring, and confirmatory sampling to demonstrate successful site remediation.

The field evaluation program must be designed and implemented to collect the site-specific information necessary to establish the presence or absence of contaminants, potential adverse effects, as well as delineate the extent of contamination. Depending on the outcome of the initial investigation, additional Phase 2 ESAs may be required to identify the nature, degree and extent of contamination. Based on the laboratory analytical data and applicable Alberta Tier 1 guidelines or Alberta Tier 2 guidelines, an environmental professional will be able to determine if remediation is necessary. The environmental professional(s) will need to ensure that they have identified the degree and extent of the soil and groundwater contamination.

Alberta Environment developed an *Environmental Site Assessment (ESA) Checklist* (Alberta Environment, 2009a) to ensure that a site is thoroughly assessed, substance(s) delineated, and reports contain the appropriate information for

remediation and/or risk management. The environmental professional is responsible for ensuring that all aspects of the ESA Checklist have been completed and included in any Phase 2 ESA. All Phase 2 ESAs submitted to Alberta Environment must be accompanied by a *Record of Site Condition* (Alberta Environment, 2009b); however, Alberta Environment does not require a separate *Record of Site Condition* to be included with the remediation certificate application form.

Additional guidance on conducting a Phase 2 ESA is available from the *Canadian Standards Association* (Canadian Standards Association, 2000) and publications provided by other provincial regulators, such as Ontario's *Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario* (Ontario Ministry of Environment, 1996).

Other guidance documents include:

- *Guidelines for Monitoring and Management of Contamination Under EPEA Approvals* (Alberta Environment, 1996a), as amended;
- *Soil Monitoring Directive* (Alberta Environment, 1996b), as amended;
- *Guidance Manual on Sampling, Analysis, and Data Management for Contaminated Sites, Volume I: Main Report* (CCME, 1993a); and
- *Guidance Manual on Sampling, Analysis, and Data Management for Contaminated Sites, Volume II: Analytical Method Summaries* (CCME, 1993b).

3.5 Define Remediation Requirements and Implement Remedial Action Plan

There are three main options for managing risks at contaminated sites in Alberta:

- Remediation to Alberta Tier 1 guidelines;
- Remediation to Alberta Tier 2 guidelines; or
- Managing risks through exposure control.

Substances not identified within the guidelines require approval from Alberta Environment prior to acceptance of final remediation objectives.

3.5.1 Alberta Tier 1 Soil and Groundwater Remediation Guidelines

The Alberta Tier 1 Soil and Groundwater Remediation Guidelines (Alberta Environment, 2007a, as amended) are intended to provide a single, comprehensive source of soil and groundwater remediation guidelines for use in Alberta. The Alberta Tier 1 guidelines are generic objectives that provide concentrations of substances in soil and water that will not pose an adverse risk to human health and the environment under various land and water use conditions. Area(s) remediated to Alberta Tier 1 guidelines are eligible for regulatory closure through a remediation certificate.

3.5.2 Alberta Tier 2 Soil and Groundwater Remediation Guidelines

Some site-specific conditions may exist on sites that differ from the generic conditions that were assumed in the development of Alberta Tier 1 guidelines. The *Alberta Tier 2 Soil and Groundwater Remediation Guidelines*, (Alberta Environment, 2007b, as amended) contain prescriptive guidance for modifying Alberta Tier 1 guidelines, including pathway exclusion, eligible guideline adjustments, data requirements and calculation procedures. Alberta Tier 2 guidelines provide the same level of protection as Alberta Tier 1 guidelines. Area(s) remediated to Alberta Tier 2 guidelines are eligible for regulatory closure through a remediation certificate.

3.5.2.1 Pathway Exclusion

Certain exposure pathways may be excluded at Alberta Tier 2 if they are not operative at the site and their exclusion does not lead to a requirement for land and/or water use restrictions. A number of exposure pathways are mandatory and are ineligible for exclusion at Alberta Tier 2 regardless of whether they are operative.

3.5.2.2 Guideline Adjustment

It may be possible to modify the Albert Tier 1 guideline by substituting site-specific values for certain parameters. Alberta Tier 2 guideline adjustment is only available for the Tier 1 models used for calculation of the vapour inhalation and groundwater protection pathways. Only certain stable and measurable parameters can be modified at the guideline adjustment level and parameter modifications must be within acceptable ranges for the parameter of interest.

3.5.2.3 Site-Specific Risk Assessment

Site-specific risk assessment is an effective screening tool to identify potential problematic exposure pathways and to compare the relative merits and levels of protection afforded by various environmental management options. Alberta Tier 2 remediation guidelines developed from site-specific risk assessments are designed to be as protective of human health and the environment as Alberta Tier 1 guidelines. This approach requires a rigorous site-specific risk assessment procedure combined with monitoring to support guideline modification. The Alberta Tier 2 guidelines provide guidance on the use and limitations of a site-specific risk assessment.

In all instances, site-specific remediation objectives will require the use of procedures; protocols and monitoring that are acceptable to Alberta Environment. Where no clear guidance documents have been accepted by Alberta Environment, discussion will be required with Alberta Environment prior to acceptance of final remediation objectives.

3.5.3 Exposure Control

In some site-specific cases, exposure control through administrative controls and/or physical exposure barriers is an acceptable means of risk management. The risk management system must provide protection of human and ecological health until remediation is completed. Elements of a risk management plan include, but are not limited to: protection of receptors, demonstration that any potential adverse effects

are being managed, administrative and exposure controls, land use restrictions, and monitoring. When an ongoing risk management plan is adopted at a site, there must be a commitment by responsible parties to maintain and monitor the risk management system until Alberta Tier 1 guidelines or Alberta Tier 2 guidelines have been met. Implementation of a risk management plan requires the agreement of all affected third parties.

A remediation certificate will not be issued for the off-site portion of the release under exposure control or risk management. Risk management plans may only be developed for residential, commercial, or industrial lands.

Contaminated areas within "natural" or "agricultural" land uses, as outlined in Alberta Tier 1 guidelines, require complete remediation and are not eligible for risk management plans.

Other Alberta Environment documents to assist in remediation planning include:

- *Guidelines for the Remediation and Disposal of Sulphur Contaminated Solid Wastes* (Alberta Environment, 1996c);
- *Code of Practice for Land Treatment of Soil Containing Hydrocarbons* (Alberta Environment, 2008);
- *Guideline for Monitoring and Management of Soil Contamination under EPEA Approvals* (Alberta Environment, 1996a);
- *Salt Contamination and Assessment Remediation Guidelines* (Alberta Environment, 2001).

3.6 Confirm Remediation Results and Submit Final Report

Sufficient confirmatory samples must be taken to confirm that the soil and groundwater were remediated to meet Alberta Tier 1 guidelines or Alberta Tier 2 guidelines. Once the site is remediated to Alberta Environment's guidelines, a final report and an updated *Record of Site Condition* must be submitted to Alberta Environment. The final report should clearly explain the methods used to determine that the release was remediated. All aspects outlined in the *ESA Checklist* must be addressed in the final Phase 2 ESA report. The analytical results of confirmatory samples must be appended to the report.

4.0 Remediation Certificates

Remediation certification is a voluntary program intended for Petroleum Storage Tank sites (PST) to provide an incentive to clean up contamination by providing regulatory liability closure once a remediation certificate is issued. The *Remediation Certificate Regulation* was created to formalize a system that offers closure of regulatory liability for a remediated area. Remediation certificates are only issued on area(s) where a release occurred that has been fully delineated and remediated.

4.1 Eligibility

Alberta Environment requires full disclosure of the release, including all assessment and remediation activities. Assessment must include full delineation of the contaminated area. Requirements for eligibility for a remediation certificate are described below.

4.1.1 Releases Contained Onsite

If a release is contained within the property boundaries and does not extend off the legal land boundaries, the entire release must be completely remediated to comply with Alberta Tier 1 guidelines and/or Alberta Tier 2 guidelines for the area to be eligible for a remediation certificate. Complete remediation of all onsite areas of the release includes contamination that has migrated under buildings and site infrastructure.

Only remediated areas of a property can be certified, and not an entire property.

4.1.2 Onsite Releases Extending Outside the Legal Land Boundaries (Offsite)

If a release that occurred on a property has migrated outside the legal land boundaries, all affected third parties must be consulted to determine if they want their property remediated. If the on-site and off-site areas have been completely remediated to comply with Alberta Tier 1 guidelines and/or Alberta Tier 2 guidelines, the remediated area is eligible for a remediation certificate.

If any affected third party does not want their land disturbed by remediation activities, or requests risk management, a risk management plan must be developed. To be eligible for a remediation certificate, the release must be cleaned up within legal land boundaries (onsite) to comply with Alberta Tier 1 guidelines and/or Alberta Tier 2 guidelines and any unremediated off-site portions of the release must be subject to an acceptable ongoing risk management plan. Risk management plans for unremediated off-site portions of the release can be developed for industrial, commercial and residential land uses. Regulatory closure will only be provided for the portion of remediation complying with Alberta Tier 1 guidelines or Alberta Tier 2 guidelines. Any remaining contamination will not be certified and remains potentially subject to enforcement provisions under EPEA.

If a risk management plan is proposed for the unremediated off-site portion of contamination, the following must be met:

a) The risk management measures must be designed and implemented to ensure that human and ecological health are protected. The risk management plan must include a commitment from a responsible party that any potential adverse effects will continue to be managed until Alberta Tier 1 guidelines or Alberta Tier 2 guidelines have been achieved. Once a risk managed area is remediated to meet Alberta Tier 1 guidelines and/or Tier 2 guidelines, the area is eligible for a remediation certificate.

b) All affected third parties agree to the terms and conditions of the risk management plan and voluntarily sign the *Third Party Risk Management Plan Agreement*.

Any portion of the release under a risk management plan remains the responsibility of the person(s) responsible for the release under EPEA. Risk management plans may only be developed for residential, commercial, or industrial lands. Exposure control methods or procedures used to prevent future re-contamination of the remediated area must be included and must demonstrate that re-contamination is not likely.

4.1.3 Remediation of Offsite Area Only

Remediated areas on land that was not the source or origin of contamination are eligible for a remediation certificate. Exposure control methods or procedures used to prevent future re-contamination of the remediated area must be included and must demonstrate that re-contamination is not likely.

4.1.4 Number of Remediation Certificates

More than one remediation certificate can be issued on a site if there is more than one release. Once a risked managed area is remediated to meet current Alberta Tier 1 guidelines and/or Alberta Tier 2 guidelines, the area is eligible for a remediation certificate.

4.2 Ineligibility

a) Any remediated area that does not meet current Alberta Tier 1 guidelines and/or Alberta Tier 2 guidelines.

b) A contaminated area within natural or agricultural land uses, as outlined in Alberta Tier 1 guidelines, requires complete remediation and is not eligible for a remediation certificate if a risk management plan is in place.

c) Alberta Environment will not certify land where contamination is initially identified, but does not exceed Alberta Tier 1 guidelines or Alberta Tier 2 guidelines and is therefore, not remediated.

d) Land that has received a closure letter from Alberta Environment in the past does not automatically qualify for a remediation certificate. The remediation certification program is voluntary and there is no requirement to pursue a remediation certificate after a closure letter has been issued.

e) Alberta Environment does not issue remediation certificates for sites on federal land.

5.0 Application Process

5.1 Remediation Certificate Application Form

A *Remediation Certificate Application* form must be completed when applying for a remediation certificate. The following provides a guide to filling out the application form:

Application Form, Section 1.0 - Site Identification

Identify the site name and location. A Plan, Block, Lot or Alberta Township System legal land description must be provided for all land that is the subject of the application. The legal land description is the short legal on the land title, or the land included within the disposition. Do not supply a mailing address, post office box, or rural route as a site address.

Application Form, Section 2.0 - Applicant

There are no restrictions as to who can apply for a remediation certificate. In general, the applicant will be the person responsible for contamination; however, this is not a requirement. If the applicant is a company, the full legal registered name of the company must be provided and the contact person must be a representative of the company, not an agent or consultant.

Application Form, Section 3.0 - Consultant

The legal registered name of the consulting company must be provided. The consultant listed in this section does not necessarily have to be the same individual as the environmental professional that signs the professional declaration in Section 14.

Application Form, Section 4.0 - Landowner(s)

The only lands that are applicable for remediation certificates are private land, Special Areas land, and provincial Crown land. Federal lands are not eligible. The names, phone numbers and mailing addresses of all registered owners, of the land that is the subject of this application, must be provided. Copies of the land title must be attached for each registered landowner. If the number of landowners exceeds three, attach information for additional landowners separately.

Application Form, Section 5.0 - Occupancy

Identify the type of occupancy for the site.

Application Form, Section 6.0 - Activity

Check off the activity that applies. For tracking purposes, include the Petroleum Tank Management Association of Alberta (PTMAA) identification number or the Alberta Municipal Affairs (AMA) file number, if applicable. If a Petroleum Storage Tank Closure Report was submitted to the PTMAA, select 'yes' and attach the report to the

application. It should be noted that tanks abandoned in place require prior approval from the local fire official. For these cases, also include the approval documentation.

Additionally, the Alberta Environment file number is requested where available. This number can generally be found in the top, right-hand corner of any correspondence issued by Alberta Environment.

Application Form, Section 7.0 -Substance Summary

7.1 Substance Release Summary

For historic releases, it is acknowledged that the applicant may not know all the requested details of the release. Complete this section as accurately as possible. If the date of the release is unknown, indicate when the contamination was first discovered.

7.2 Substances of Concern

Substances of concern should include all substances that are part of the release. The substances listed must have exceeded Alberta Tier 1 guidelines or Alberta Tier 2 guidelines prior to remediation.

Remediation objectives for substances not listed in the Alberta Tier 1 guidelines or Alberta Tier 2 guidelines must be acceptable to the Director or an inspector prior to application submission. All the substances identified in this Section must be properly delineated and represented on a reference map(s) submitted to Alberta Environment.

Application Form, Section 8.0 -Site Characterization

8.1 Onsite Characterization

Onsite refers to the physical site (defined by the property boundary) where the contamination originated. Alberta Tier 1 guidelines define five environmental land use categories. Each category has remediation guideline values.

A number of exposure pathways are mandatory and are ineligible for exclusion at Alberta Tier 2 regardless of whether they are operative. Their exclusion would lead to a requirement for land and/or water use restrictions. Exposure pathways not eligible for exclusion include direct human contact, soil contact for plants and invertebrates, and others. Refer to the Alberta Tier 2 guidelines for information on exposure pathway exclusion.

8.2 Offsite Information

Offsite information is relevant when the release has migrated beyond the legal property boundary.

8.3 Receptors and Preferential Pathways

All relevant receptors and pathways must be identified for the release. Their locations must be indicated on a map that is attached to the application.

8.4 Groundwater Assessment for Domestic Use Aquifers

Domestic use aquifers are an important current and future water resource for the public that must be protected. Indicate if groundwater contamination was investigated during remediation of the release, and whether any impacts on domestic use aquifers exist. Alberta Environment defines a domestic use aquifer in the Alberta Tier 2 guidelines.

Application Form, Section 9.0 -Remediation

9.1 Remediation Guidelines

List the environmental land use guideline(s) that apply to the release and remediation. Future land uses must also be considered prior to remediation. When preparing a remediation plan, the environmental professional should confirm with the landowner, municipality, county or municipal district to find out if there are plans to change the land use classification for the property.

There may be multiple land use guidelines that apply to different portions of the release. For example, contaminants within 30 m of a more sensitive land use must be remediated to comply with the more sensitive land use (see Figure 2) when the guideline is controlled by vapour inhalation or groundwater ecological contact pathways. Details on determining the applicable remediation guidelines for a particular land use are provided in the Alberta Tier 1 guidelines and Alberta Tier 2 guidelines.

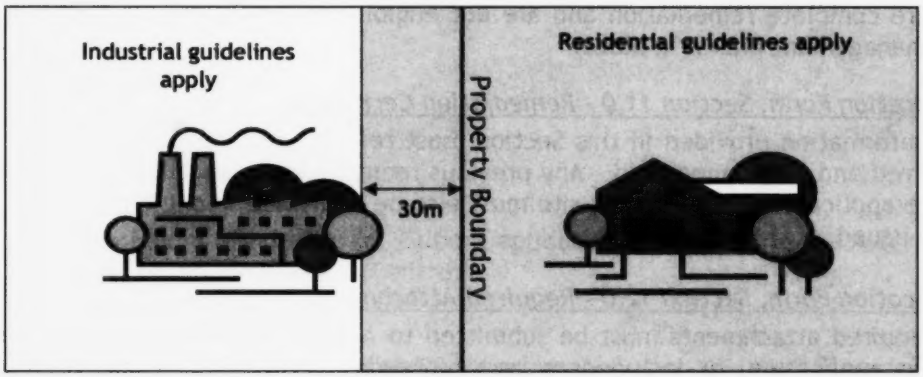


Figure 2: Example of 30 m Buffer Zone Adjacent to More Sensitive Land Use
This diagram is for illustration purposes and can be applied to any land use scenario where a more sensitive land use is adjacent to a less sensitive land use.

9.2 Remediation Process

The date substance remediation was completed should reflect the date the analytical results confirmed remediation was achieved. If soil and/or groundwater were removed from the property, provide information for the receiving waste management

facility and types and volumes of waste. If new soil is brought to the site, the source location, volume, and analytical results demonstrating the replacement soil is not contaminated must be provided.

9.3 Confirmation of Remediation

Attach analytical results for confirmatory sampling indicating successful remediation.

Application Form, Section 10.0 - Risk Management Plan under the Exposure Control Option

It is important to identify if any off-site areas of the release were not remediated to applicable guidelines. If complete remediation of the release was not achieved, the area must be managed through an ongoing risk management plan. The risk-managed portion of the release is not eligible for a remediation certificate until Alberta Tier 1 guidelines or Alberta Tier 2 guidelines are met. Effective measures must be taken to prevent the contaminant(s) from re-entering the remediated land where a remediation certificate is applied for or issued. All affected third parties must voluntarily agree with the proposed plan, and sign a *Third Party Risk Management Plan Agreement*.

The Applicant must submit both the signed *Third Party Risk Management Plan Agreement* and the risk management plan with the *Remediation Certificate Application Form* to be eligible for a remediation certificate. Risk management plans may only be used for residential, commercial, or industrial land uses. Contaminated areas within natural or agricultural land uses, as outlined in Alberta Tier 1 guidelines, require complete remediation and are not eligible for a remediation certificate if a risk management plan is in place.

Application Form, Section 11.0 - Remediation Certificate

The information provided in this Section must reflect the land on which the release occurred and was remediated. Any previous remediation or reclamation certificates, where applicable, issued on the site must also be identified, along with the date they were issued.

Application Form, Section 12.0 - Required Attachments

All required attachments must be submitted to Alberta Environment as attachments to the application, or included as part of submitted reports. Appendix A of the application form must be completed in conjunction with this Section to provide a summary of reports and required attachments in an easily referenced manner.

Application Form, Section 13.0 - Applicant Declaration

This Section must be agreed to and signed by the applicant or an employee of the company. An agent or consultant cannot sign the applicant declaration.

Application Form, Section 14.0 - Environmental Professional Declaration

The *Remediation Certificate Application* form must be signed by a member in good standing of one of the six professional regulatory organizations who meets the qualifications for work experience and insurance.

5.2 Application Fees and Submissions

5.2.1 Application fees

The remediation certificate application fee is $1000. Applications not accompanied with the fee will be refused and returned to the Applicant.

The remediation certificate application fee will be used to fund Alberta Environment's external costs of conducting the audits on sites that receive remediation certificates.

Acceptable methods of application fee submission are by cheque (made payable to *Minister of Finance*), VISA or MasterCard.

5.2.2 Application Submissions

Questions with respect to the remediation certificate program and process should be directed to Alberta Environment Regulatory Approvals Centre.

The application fee should accompany the application for a remediation certificate. Completed application packages are to be submitted to:

Alberta Environment
Regulatory Approvals Centre
9th Floor Oxbridge Place
9820 - 106 Street NW
Edmonton, Alberta, T5K 2J6.

Electronic submissions are preferred. Submit applications via email to the Alberta Environment's Regulatory Approval Centre:
RAC.environment@.gov.ab.ca

5.3 Role of the Environmental Professional

As part of the shared governance initiative, Alberta Environment is placing more reliance on professional reclamation and remediation practitioners to conduct work in a competent manner towards meeting Alberta Environment's requirements. The *Competencies for Remediation and Reclamation Advisory Committee's Recommendations Report* (Alberta Environment, 2006) provides Competency Tables for various activities such as a Phase 1 ESA and remediation and reclamation.

The Environmental Professional Declaration in the *Remediation Certificate Application* form and supporting documents may be signed by a member in good standing of one of the following professional regulatory organizations:

- Alberta Institute of Agrologists;
- Alberta Society of Professional Biologists;
- Association of Professional Engineers, Geologists, Geophysicists of Alberta;
- Association of the Chemical Profession of Alberta;
- College of Alberta Professional Foresters; and
- College of Alberta Professional Forest Technologists.

The member must have a minimum of five years verifiable experience in remediation or reclamation relevant to the competencies table contained in the *Competencies for Remediation and Reclamation Advisory Committee's Recommendations Report* (Alberta Environment, 2006). The member (or their employer) must carry and maintain professional liability insurance (errors and omissions).

5.4 Role of the Applicant

The Applicant must ensure that the information presented in the *Remediation Certificate Application* form is complete and correct. All requested information must be disclosed within the application form. Knowingly providing false information is an offence under the *Environmental Protection and Enhancement Act* and is subject to legal penalty.

5.5 Remediation Certificates

5.5.1 Certificate Content

Remediation Certificates will be issued to applicants that meet the requirements of the program, and will contain the following information:

- The applicant's name;
- a map, with references to legal boundaries of the land, showing the remediated area (for examples, see Appendix A);
- a diagram, including cross-sections, showing the top of remediation and the base of remediation within the remediated area;
- the substance(s) that are the subject of the remediation certificate;
- the remediation guidelines and associated land use(s) to which the substance(s) were remediated;
- the date the remediation was completed;
- the date the remediation certificate was issued; and,
- any terms or conditions that the Director or inspector considers appropriate.

5.5.2 Liability Closure

Once a remediation certificate is issued, Alberta Environment will not issue an environmental protection order for the remediated area if it was compliant with Alberta Tier 1 guidelines or Alberta Tier 2 guidelines that were in effect at the time of certification.

If the land use changes to a more stringent land use after a remediation certificate is issued, the person making the change will be required to conduct additional remediation to meet the standard of the day and may reapply for a remediation certificate. The original remediation certificate would not apply to a new, more stringent, land use.

If an audit or substantiated complaint indicates that the site was not compliant with Alberta Environment's requirements at the time of certification, the remediation certificate may be cancelled. Liability would remain with the person responsible. To receive a remediation certificate, the applicant would need to make the site compliant with the standards of the day and reapply for a remediation certificate with a new application fee.

6.0 Public Disclosure of Information

All application information in support of a Remediation Certificate, including the application, is designated public information under the *Environmental Protection and Enhancement Act*. All submitted documents and correspondence will be publicly available through an on-line document publishing application.

In April 2005, through a legislative amendment to the *Disclosure of Information Regulation* under the *Environmental Protection and Enhancement Act*, the Government of Alberta made additional types of information and records routinely available and accessible to the public. The additional types of information made routinely available through Ministerial Order 23/2004 can be viewed at: http://environment.alberta.ca/documents/Ministerial_Order_23-2004.pdf

Notably, all scientific and/or technical information, studies, reports, and/or records submitted to Alberta Environment as required by Part 5 of the *Environmental Protection and Enhancement Act*, as well as correspondence between Alberta Environment and the submitter in regard to same, are also available to the public.

Alberta Environment has been receiving scientific/technical documentation as required by the *Environmental Protection and Enhancement Act*, marked "Privileged", "Privileged and Confidential", "Without Prejudice", "Proprietary" or similar wording. If a submitter wishes to claim privilege on portions of a document, the submitter must again provide a written rationale to the Director, as well as identify and separate the parts of the document for which privilege is being claimed. The Director will take the rationale into consideration. The remainder of the document will be made public, as provided in Ministerial Order 23/2004.

Section 35(4) of the *Environmental Protection and Enhancement Act* permits certain persons to ask the Director to maintain the confidentiality of information in a record, where the information relates to a trade secret, process, or technique. At the time the record is submitted to Alberta Environment, a written request must be provided, for the Director's consideration, detailing the reasons why the information should be kept confidential and not be disclosed. The submission must provide a rationale for each of the following four points.

A "trade secret, process or technique" means information, including a formula, pattern, method, technique and process:

a) that is used, or may be used, in business or for any commercial purpose;
b) that derives independent economic value, actual or potential, from not being generally known to anyone who can obtain economic value from its disclosure or use;
c) that is the subject of reasonable efforts to prevent it from becoming generally known; and,
d) the disclosure of which would result in significant harm or undue financial loss or gain.

The Director will consider the person's submission and notify the person of the final decision.

7.0 Appeal Process

Appeals are formal complaints about the regulatory decision of a government official. Appeals under the *Environmental Protection and Enhancement Act* or the *Water Act* are directed to the Environmental Appeals Board.

Section 91(1) (l) of the *Environmental Protection and Enhancement Act* provides rights to any person who receives notice of the issuance, amendment or cancellation of a certificate to submit a notice of appeal where the Director or an inspector issues, amends or cancels a remediation certificate. Furthermore, Section 91(1) (l.1) provides rights to any person who receives notice of the refusal to submit a notice of appeal where the Director or an inspector refuses to accept an application of a remediation certificate or refuses to issue a remediation certificate.

As per Section 91(4) (c), a *notice of appeal* must be submitted to the Environmental Appeals Board within 30 days of receipt of the notice of the decision appealed from.

For more information on the appeal process go to www.eab.gov.ab.ca

8.0 Audit Process

Alberta Environment will review each remediation certificate application for completeness and compliance with the remediation certificate regulations and Alberta Tier 1 guidelines and/or Alberta Tier 2 guidelines. Alberta Environment will conduct audits on approximately 10 percent of certified area(s) to determine if the area(s) have been properly remediated. The audits are necessary to provide assurance to the public that the applicant has remediated the certified area as declared in the application for a remediation certificate. Audits also provide assurance to the Department that the application information can be relied on for issuance of remediation certificates. The two types of audits that will be conducted are as follows:

- Desktop audit (approximately 5 percent of the certified sites); or,
- Field audit (approximately 5 percent of the certified sites).

Audits will be conducted throughout the year. A site may be audited within three years following issuance of a certificate. If an area fails an audit, the remediation certificate may be cancelled, and the fee not refunded.

9.0 Reference Documents

Alberta Environment, 1996a, as amended. Guidelines for Monitoring and Management of Contamination Under EPEA Approvals.

Alberta Environment, 1996b, as amended. Soil Monitoring Directive.

Alberta Environment, 1996c. Guidelines for the Remediation and Disposal of Sulphur Contaminated Solid Wastes.

Alberta Environment, 2001. Salt Contamination Assessment and Remediation Guidelines.

Alberta Environment, 2005. A Guide to Release Reporting.

Alberta Environment, 2006. Competencies for Remediation and Reclamation Advisory Committee: Recommendations Report.

Alberta Environment, 2007a, as amended. Alberta Tier 1 Soil and Groundwater Remediation Guidelines.

Alberta Environment, 2007b, as amended. Alberta Tier 2 Soil and Groundwater Remediation Guidelines.

Alberta Environment, 2008. Code of Practice for Land Treatment of Soil Containing Hydrocarbons.

Alberta Environment, 2009a. Environmental Site Assessment Checklist.

Alberta Environment, 2009b. Record of Site Condition Form.

CCME (Canadian Council of Ministers of the Environment), 1993a. Guidance Manual on Sampling, Analysis, and Data Management for Contaminated Sites - Volume I: Main Report.

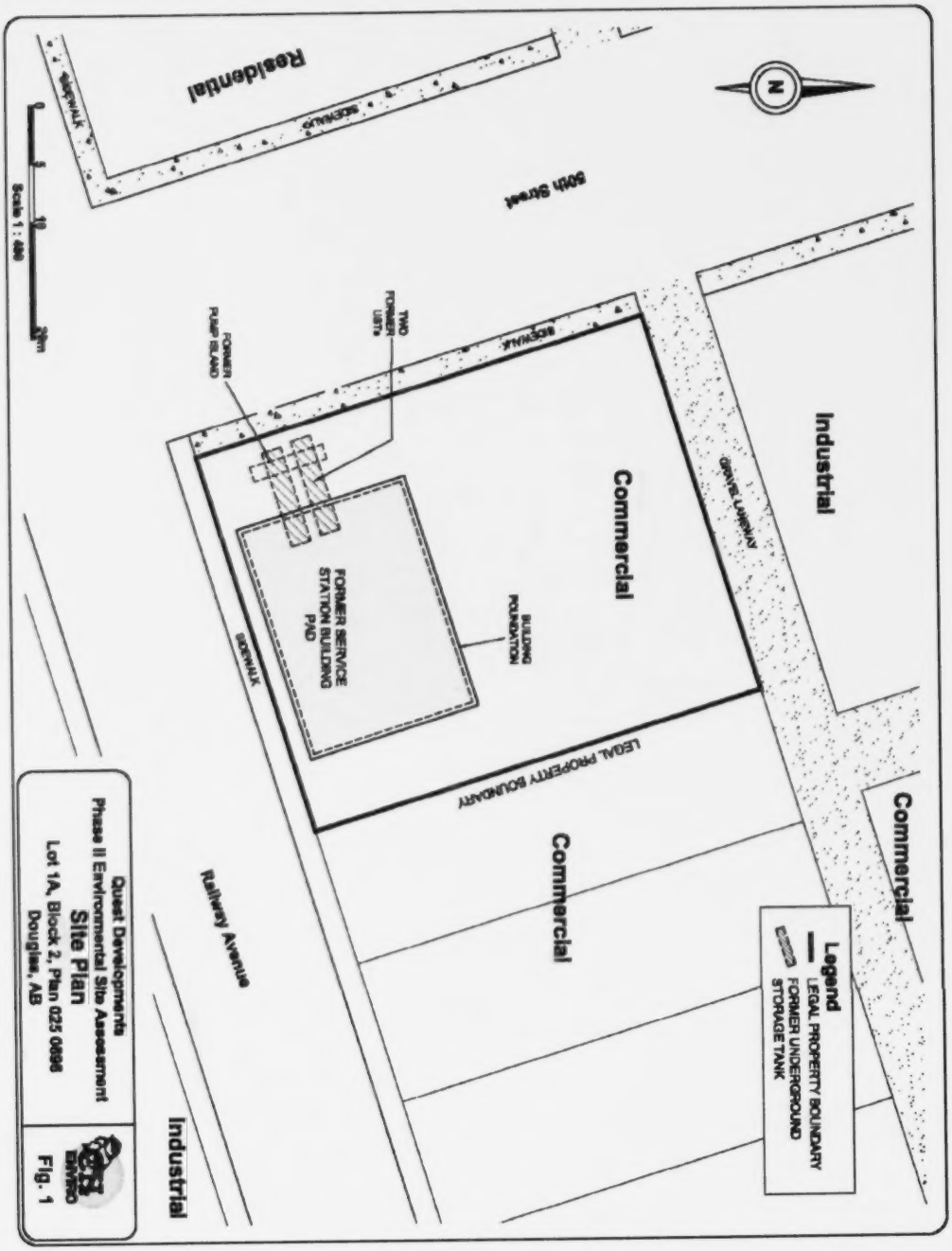
CCME (Canadian Council of Ministers of the Environment), 1993b Guidance Manual on Sampling, Analysis, and Data Management for Contaminated Sites - Volume II: Analytical Method Summaries.

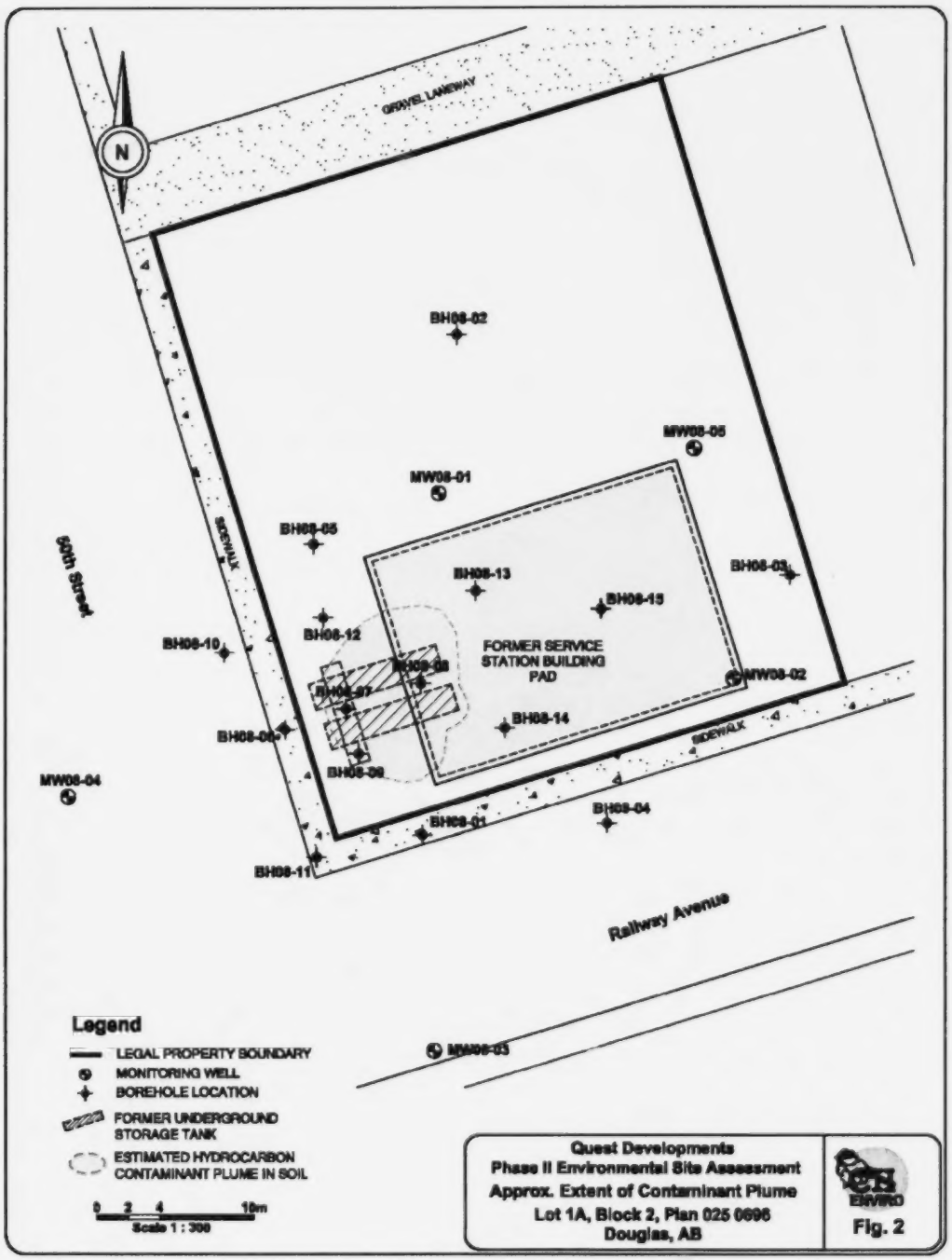
Canadian Standards Association, 2000. Z769-00: Phase 2 Environmental Site Assessment.

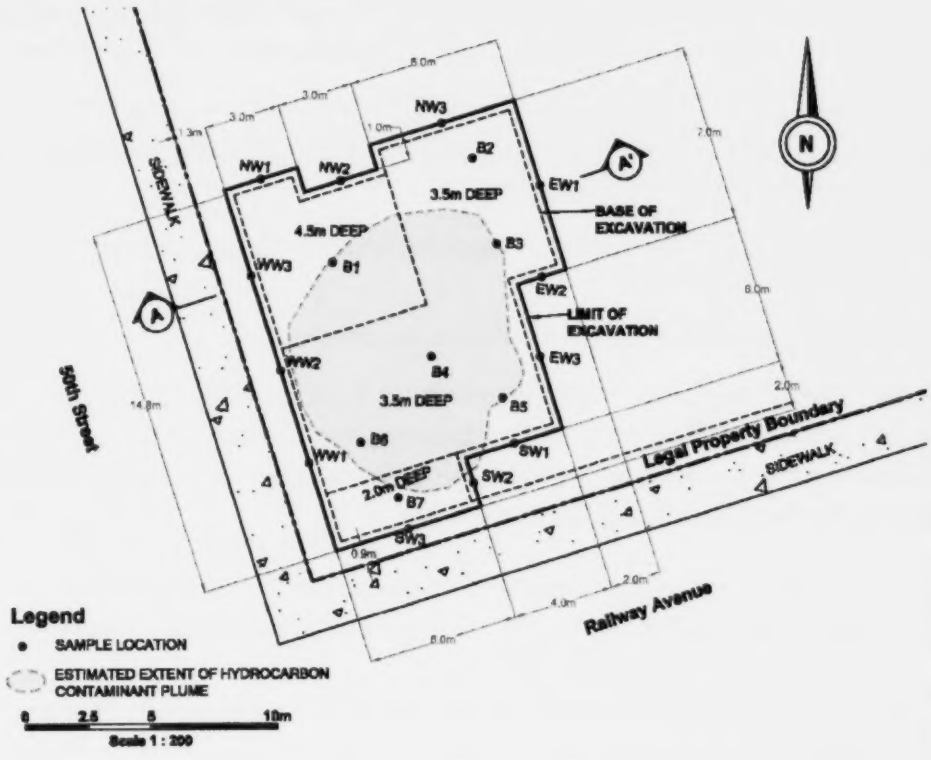
Canadian Standards Association, 2001. Z768-01: Phase 1 Environmental Site Assessment.

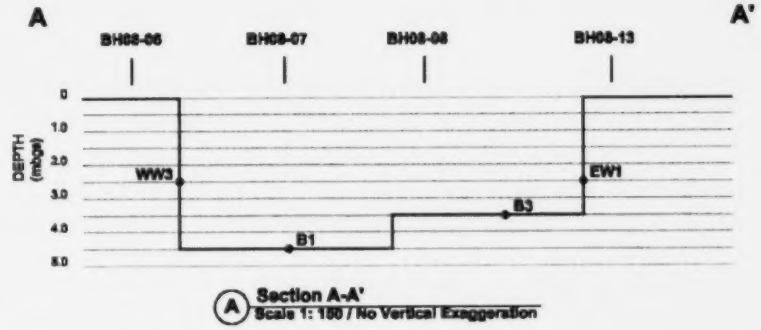
Ontario Ministry of the Environment, 1996. Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario.

10.0 Appendix A: Example diagrams




GRAVEL LANEWAY
N
BH08-02
MW08-05
MW08-01
BH08-05
SIDEWALK
50th Street
BH08-13
BH08-03
BH08-15
BH08-12
BH08-10
FORMER SERVICE STATION BUILDING PAD
MW08-02
BH08-07
BH08-14
BH08-06
SIDEWALK
BH08-08
MW08-04
BH08-01
BH08-04
BH08-11
Railway Avenue
MW08-03
Legend
LEGAL PROPERTY BOUNDARY
MONITORING WELL
BOREHOLE LOCATION
FORMER UNDERGROUND STORAGE TANK
ESTIMATED HYDROCARBON CONTAMINANT PLUME IN SOIL
0 2 4 10m
Scale 1 : 300
Quest Developments
Phase II Environmental Site Assessment
Approx. Extent of Contaminant Plume
Lot 1A, Block 2, Plan 025 0696
Douglas, AB
ENVIRO
Fig. 2





A Section A-A'
Scale 1: 150 / No Vertical Exaggeration

Quest Developments
Phase II Environmental Site Assessment
Remediation Diagram
Lot 1A, Block 2, Plan 025 0696
Douglas, AB

ENVIRO
Fig. 3

11.0 Appendix B: Definitions for Remediation Certificate Guideline

Act - the *Environmental Enhancement and Protection Act*

Agricultural Land - agricultural land as described in the *Alberta Tier 1 Soil and Groundwater Remediation Guidelines*

Applicant - a person who submits an application for a remediation certificate of section 3 of the Regulation

Application - an application for a remediation certificate

Barrier - Under a Alberta Tier 2 approach, if there is sufficient thickness of natural geologic material acting as a *barrier* between the bottom of the contaminant zone and the domestic use aquifer (DUA), the drinking water pathway may be excluded. To exclude the DUA pathway, there must be:

- at least 5 metres of massive, unfractured, fine-grained material meeting appropriate guidelines with a bulk hydraulic conductivity that is less than or equal to 1×10^{-7} m/s; or
- an equivalent thickness of natural geologic material supported by technical information regarding the lithological properties prepared by the professional conducting the site assessment and accepted by Alberta Environment.

Multiple measurements of barrier thickness should also be obtained, again with the most conservative value chosen.

Base of Remediation - the distance in meters, below ground surface, of the lowermost depth of the soil, water, or groundwater that was remediated

Domestic Use Aquifer (DUA) -an aquifer as defined in the *Alberta Tier 2 Soil and Groundwater Remediation Guidelines*

Natural Area - a natural area described in the *Alberta Tier 1 Soil and Groundwater Remediation Guidelines*

Remediated Area - the land that is the subject of an application and that has been remediated to meet the requirements of the Guidelines

Remediated Zone - the soil and water within the remediated area that is located between the base of the remediation and the top of the remediation

Remediation - reducing, removing, or destroying substances in soil, water, or groundwater, through the application of physical, chemical, or biological processes

Top of Remediation - the distance, in meters below ground surface, of the uppermost surface of the soil, water, or groundwater that was remediated